AMENDMENTS TO THE SPECIFICATION

Please amend Page 11, first paragraph as follows:

With reference to Fig. 3, shown is a preferred embodiment of a transmitter 22 of modem 13 employing the FCS and adaptive parameter update logic 200 of the present invention. Illustratively, an ISA bus, a standard computer bus which eliminates the need for interfaces, supplies data, in the form of a data word that can be either 16 or 32 bits for the preferred embodiment, on line 31 to tx buffer 32. Tx buffer 32 outputs a signal representative of information to be transmitted on line 34. The information signal, or N bit word on line 34 includes the setting of a poll bit, which indicates to each remote device (through channel 36) that a communication is starting. The use of the poll bit will be described herein in detail with reference to Figs. 4A, 5 and 6. The N bit word on line 34 next has its frame check sequence (FCS) calculated 190 in DSP 21 and in accordance with the present invention.

Please amend Page 15, last paragraph as follows:

When remote device 18 responds to the poll, the signal on channel 36 from remote device 18 contains new channel parameters. In accordance with the present invention, at this time, FCS and adaptive parameter update logic 200 located in DSP 21 and illustrated as block diagram components 146 and 148 of Fig. 4A, and components 190 and 196 of Fig. 4B, calculates the frame check sequence (to be discussed in detail with respect to Fig. 5) in order to determine whether the most recently received signal contains errors. If the transmission from remote device 18 is error free, the most recently calculated coefficients 146 sent on line ~~152~~ 160 are saved and used to update equalizer 126 via line 151. These coefficients will be recalled by

control device 13 the next time a transmission takes place. If the most recently received signal contains an error, as determined by the FCS and adaptive parameter update logic 200, the most recently calculated channel parameters in register 146 are discarded in favor of the last known good parameters in register 148.

Please amend Page 17, paragraph two as follows:

The output of slicer 138 is then supplied on line 149 to precoder reconstruction filter 152. Precoder reconstruction filter 152 removes the modulo operation applied in transmitter 22 of Fig. 3. The output of slicer 138 represents ideal reference signals of the X and Y values of the signal space constellation. These ideal values are input to subtractor ~~151~~ 155, which subtracts the output of FIR filter 157. The output of subtractor 151 155 is fed into FIR filter 157 and adder 158. The output of FIR filter 157 feeds subtractor ~~151~~ 155 and modulo operation 159. Modulo operation 159 is then added to the input to FIR filter 157 by adder 158 resulting in the removal of the modulo operation applied in transmitter 22 of Fig. 3.

Please amend Page 18, last paragraph as follows:

If included, optional scrambler 182 descrambles the n bit word and supplies the word to register 186, which performs the inverse operation of register 46 in transmitter 22. The output of register 186 is supplied on line 187 to RX buffer 188, which in turn supplies the data word to frame check sequence and header test logic 190. FCS and header test logic 190, is part of the frame check sequence and adaptive parameter update logic 200, performs the layer two error detection in the DSP on a per message basis by calculating the FCS on a per frame basis. The result of the FCS is used as an indication of whether or not to save the updated equalizer adaptive coefficients. If the FCS indicates an error free transmission, the updated coefficients are

provided on line ~~152~~ 160 to register 146 (Fig. 4A) and used to update the adaptive coefficients of equalizer 126. The data word is then supplied on line 192 to error counter 194, which provides a running error count.

Please amend Page 21, first paragraph as follows:

In block 214 the remote device receives the message having the poll bit set from the control device ~~and,~~ . In block 216, if it has any information to transmit, the remote device responds with a message.